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CONSTRUCTION OF THE SOUTH SIBERIAN TRUNK LINE

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The construction of the South Siberian Trunk Line, which is a part of the new Five-Year Plan of Reconstruction and Development of the National Economy, is very important in strengthening the transport communications of Siberia and the Kuznetsk Basin with the Urals and the central part of the Soviet Union.

The trunk line from Stalinsk to Akmolinsk through Barnaul and Pavlodar and farther on from Magnitogorsk to the vicinity of the city of Kuybyshev is a new latitudinal route south of the existing Siberian Trunk Line and will be of considerable assistance in the further development of the country's productive forces.

With respect to volume and complexity of work, variety of topographical, geological, and climatic conditions (mountains, taiga, steppe, arid areas, saline soil, etc.), the construction of the South Siberian Trunk Line is a tremendous railroad project never before attempted in previous Five-Year Plans. The volume of work required by the South Siberian Trunk Line exceeds the volume of work on the Turksib and Moscow-Donbass Trunk Lines combined.

Great advances have been made in construction work in our country in the course of the Stalin Five-Year Plans. Mechanization and industrialization have completely changed the pace of construction, making it possible to employ high-speed and continuous construction methods.

Two important sections of the South Siberian Trunk Line, Stalinsk-Barnaul and Akmolinsk-Pavlodar, have been under construction in 1948. The Stalinsk-Barnaul line goes through mountains and taiga, crossing the

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Salair Mountains and the Chumysh River and its tributaries, the Alambay and Borovlyanka. From Altayskaya to the Chumysh River the terrain is level with a transition to hills. From the Chumysh River to the western slope of the Salair Ridge (130 kilometers) the terrain is extremely hilly, cut by deep valleys of the tributaries of the Chumysh. For the next 50 kilometers the route runs through a mountainous taiga section of the Salair Mountains with jutting peaks and deep saddles. The separate peaks rise 100-150 meters above the saddles. The section from the eastern slope of the Salair Ridge to the Artyshta Station is a transition from taiga to forest steppe and is hilly.

For the whole length of the line the soil is predominantly of a loess-type, clayey character with extra moisture in the taiga area and attaining a degree of pliability in certain spots. The route encounters layers of rock in the mountainous section. Consequently this is one of the most difficult of railroad lines to construct, particularly the middle part. The most complicated part is the crossing of the Salair Ridge spur. In this section many large cuts and fills, 300,000 cubic meters and more in volume, have to be made.

The total volume of earthwork on the Stalinsk-Barnaul line is 13.1 million cubic meters, including more than one million cubic meters of rock. The average volume of earthwork per kilometer for the whole line is 60,000 cubic meters, and in the taiga section it is about 200,000 cubic meters per kilometer. The cubic content to be moved is about 73 percent of the estimated profile volume.

Very broken terrain also requires a large number of artificial structures [bridges, culverts, viaducts, tunnels, etc.]. A total of four large and medium bridges and 189 small bridges and culverts have to be built on the Stalinsk-Barnaul line. In the taiga section four artificial structures per kilometer are required. A total of 56,000 cubic meters of stone and concrete and 5,200 cubic meters of reinforced concrete are required. Because of soft, loess-type, clayey soils under the foundations in combination with ground water, 39 pile culverts are required.

The Akmolinsk-Pavlodar line may be divided into four sections according to topographical and geological peculiarities. In the first section, from the Akmolinsk Station to the Yeremen'-Tau Station, the terrain is comparatively level; individual sections are slightly hilly, treeless plain. The soil in the section is clayey soil, sandy loam, and sand.

The second section, Yeremen'-Tau to Kilometer Point 192, is very different from the first. For a distance of 30 kilometers beyond Yeremen'-Tau the route runs through mountainous country. The Yeremen'-Tau Mountains are crisscrossed with deep, tortuously winding ravines with many branches. Subsurface water is seldom encountered and only at great depth. The geological structure is very complex.

A large amount of material, including rock, will have to be moved in crossing the Yeremen'-Tau Mountains, on the descent along its spurs, and in crossing several high points with subsequent passage of the route through deep ravines.

The third section up to Kilometer Point 330 is over a rolling plain covered with isolated hills and groups of hills. The base rock is covered with varying thicknesses of sandy loam and clayey soil.

The fourth section, up to the bridge across the Irtysh River, is a transition from low hills to the Priirtysh plain. The base soil is clay. The layers of clay are under layers of water-bearing sands. The left

bank of the Irtysh is low; where the route runs, the flood plain is 8-9 kilometers wide. The height of the embankment at the bridge is 18 meters. The right bank is high.

In 1948, money, labor, and materials are being concentrated on the construction of the afore-mentioned two lines for the accomplishment of several specific tasks. On the Stalinsk-Barnaul line, the tasks are (1) the opening to train the traffic of the 110 kilometers from Altayskaya Station to Smeinevo Station, with construction of the bridges across the Chumysh, Alambay, and Borovlyanka rivers, and (2) starting from the other end of the line, the opening to train traffic of the 30 kilometers from Artysharta Station to Alambay, as well as construction of the earth roadbed in the mountain-pass section. On the Akmolinsk-Pavlodar line, the tasks are the opening to working train traffic of the 140 kilometers from Akmolinsk to Tarenem'-Tau Station and the 120 kilometers from Pavlodar Station to the Ekibastuz coal beds, with completion of the construction of the large bridge and approaches across the Irtysh River at Pavlodar.

The laying of the track on the above sections will assure an approach to the stone and ballast deposits needed for the construction of enterprises of the construction industry, and will also make it considerably easier to build the middle sections of the lines, which go through a completely unpopulated and arid area of difficult, broken terrain.

In order for the builders to accomplish these tasks the following basic work must be performed in 1948.

Type of Work	Akmolinsk-Pavlodar	Stalinsk-Barnaul
Earthwork	2,770,000 cu m	2,045,000
Artificial structures	72	40
Stone, concrete, and reinforced-concrete work	16,600 cu m	13,000 cu m
Track-laying	162 km	58 km
Ballasting the track	100,000 cu m	55,000 cu m
Living quarters and other necessary buildings (including temporary)	145,000 cu m	85,000 cu m

By the end of September, the builders had performed 87 percent of the earthwork, completed 50 percent of the artificial structures, and laid 117 kilometers of track on the two sections. Earthwork operations are being carried out and artificial structures constructed on the rest of the route.

The organization of construction work in building the trunk line requires maximum mechanization of labor-consuming work and industrialization of construction. Toward this end, the production basis of the prefabrication industry must be expanded, and [on the site] assembly-line techniques, based on more modern technology and the wider use of prefabrication, must be more widely applied to construction. Along with this, the maximum amount of attention should be given to the introduction of modern, Stakhanovite methods in the organization of labor in excavation, masonry, carpentry, and other work, and also to the organization of mobile-type (peredvizhnyye) columns and of complex assembly-line-type brigades in earthwork, ballasting, and

track-laying, in the construction of artificial structures, living quarters, and other buildings, and in the construction of lines of communications. These brigades should be equipped with the necessary transportation, machinery, and tools.

The builders have achieved a fair degree of success in their struggle to achieve maximum mechanization of labor-consuming processes and maximum utilization of mechanical devices on hand, as shown in the following table.

	Percent of Mechanization			
	Akmolinsk-Pavlodar Line		Stalinsk-Barnaul Line	
	Plan	Actual	Plan	Actual
Earthwork (including blasting)	98	94	88	99.5
Shipping earth and ballast	100	100	100	100
Track-laying	62	28	68	--
Ballasting	80	100	70	25
Preparing concrete	90	100	80	100
Preparation of mortar	85	51	85	93

It has been stated above that from the point of view of work organization, the most difficult section is the Stalinsk-Barnaul line. In past years, there was no single organization plan in carrying out work on the construction of this line. Consequently, the middle part of the line -- the most difficult part -- was far from complete, the bridges across the Chumysh, Alambay, and Borovlyanka rivers were not built, and as a result the rails were laid only as far as Chumysh. The lack of a railroad beyond Chumysh was a serious handicap in construction and has resulted in high expenses for the transportation of materials and machinery and also made earthwork more difficult and expensive.

In 1948, because of bad ground conditions, particularly in the rainy period, when the road became impassable for both trucks and wagons, the construction crews had to build temporary bridge crossings across the Chumysh, Alambay, and Borovlyanka rivers, and to lay rails to assure the transport of machinery, vehicles, and materials to build the difficult taiga part of the route and to provide for the transport of earth by wide-gauge railroad.

To be certain that construction areas would be supplied with excavators, trucks, internal combustion locomotives, steam locomotives, flatcars, other machinery, means of transportation, construction materials, and fuel, the construction workers built an ice passage across the Chumysh River in the winter of 1947-48. After the ice began to melt, and until a permanent bridge could be built, the ice passage was replaced by a low-water crib bridge. Temporary pile bridges were built across the Alambay and Borovlyanka rivers. These measures made possible a more extensive use of broad-gauge rolling stock in earthwork, and also the transportation of construction materials to the part of the line deep in the taiga area. The construction of temporary bridges made it possible to accomplish this task independent of the dates set for the construction of permanent bridges across the Chumysh and Alambay rivers.

However, construction workers were too long in completing this work in 1948, which created difficulties in assuring the continuous work of the mechanized excavator columns working beyond the Chumysh, Alambay, and Borovlyanka rivers, and also in supplying the project with materials.

Earthwork operations on the Altayskaya-Artyshta line are carried out by means of columns. Last year's work showed that excavators working in mechanized columns did 1.8 times the work per cubic meter of bucket capacity that excavators working separately did. One defect of the work of the mechanized column in 1947 was that they did not do all the different types of work and left small finishing touches undone -- leveling of slopes, construction of ditches and hillside trenches, fixing up of the pits, etc. This meant losses for the construction sections and unjustified gains for the columns and lower quality of work. Second, the columns working on the Altayskaya-Artyshta line were not provided with narrow-gauge rail transport. Because of the rainy summer, automotive dump trucks could not get through. This resulted in a considerable reduction in the productivity of the excavators.

In 1948, as an experiment, mechanized columns have been set to work on whole kilometers and tenths of kilometers doing all the extra work other than fortification work, for which highly skilled workers are required. In this case, the mechanized columns, by means of pouring prisms, drains, etc., filled in sections of earth roadbed under the track being laid. These measures made the workers in the mechanized columns more responsible and interested, and they began looking for ways to perform the assigned task better and working out new devices for performing finishing work. However, through the fault of the "Zheldorstroymekhanizatsiya" Trust, this was not sufficiently developed.

As stated previously, 2,045,000 cubic meters of earthwork (contour volume), or 1,430,000 cubic meters of working volume, must be performed in 1948 on the Stalinsk-Barnaul line and 2,800,000 cubic meters of earthwork (contour volume), or 2,600,000 cubic meters of working volume, must be performed on the Akmolinsk-Pavlodar line. The distribution of the work according to mode of working and hauling is presented in the following table:

	Stalinsk-Barnaul		Akmolinsk-Pavlodar	
Mode of Working and Hauling	Volume (1,000 cu m)	(%)	Volume (1,000 cu m)	(%)
Contour volume	2,045		2,770	
Working volume	1,430		2,631	
Percent of transportation		70		96
Volume of mechanized work	1,260		2,583	
Percent of mechanization		88		98
Of this:				
Excavators in combination with train transport	315	25	530	20
Excavators in combination with truck transport	280	22	464	16
Excavators in combination with narrow-gauge rail transport	120	10	--	--

Mode of Working and Hauling	Stalinsk-Barnaul Volume (1,000 cum)	(%)	Akmolinsk-Pavlodar Volume (1,000 cum)	(%)
Dragline excavators and grader-elevators	230	16	1,491	58
SP-5 scrapers	38	3	--	--
Blasting	150	12	98	4

The small volume performed by the SP-5 scrapers is explained by the insufficient attention paid to this very effective type of mechanization, and also by the insufficient number of scrapers on hand and the severe shortage of tractors for work with them.

The following mean progressive norms have been established for excavators based on last year's experience: 250,000 cubic meters per year for the Kovrovets, 120,000 cubic meters per year for the PPG and Votkinets, 80,000 cubic meters for the LK and D-107, 110,000 cubic meters for the grader-elevators, and 50,000 cubic meters for the scrapers. The norm established for the scrapers is low because their use in construction has not been mastered very well.

As a result of opening socialist competition between separate excavator operators and mechanized columns for fulfillment of annual tasks ahead of time, many excavator operators had fulfilled and overfulfilled their norms by September. The work of the D-107 excavators was unsatisfactory on the whole because of a large number of faults in them.

The 300,000 cubic meters of fill for Chumysh River bed and the 180,000 cubic meters for the Alambey River bed is transported by train and loaded by Kovrovets excavators; earth pits are within the fill area and the length of haul is 2 - 3 kilometers. The dumping was supposed to be done by a new machine, the monorail plow-dumper. In order to use the plow-dumpers it was necessary to equip the railroad platforms with pedestrian overpasses and also with a monorail. However, because of a number of construction defects, mastery of this very useful and effective device is not proceeding satisfactorily. The management of the "Zheldorstroymekhanizatsiya" Trust and the construction workers must take measures immediately to eliminate these defects and make the plow-dumper an efficient machine.

The spreading of soil on the road is done by the Bizyayev ballasting machine.

On the Artyshta Station side, train transport of soil is used from Kilometer Points 178 to 185. The middle and taiga parts of the line are worked by light LK and D-107 excavators and dragline excavators powered by steam and internal-combustion engines, running on narrow-gauge tracks or operated on dump trucks. In order to provide for a change-over to wide-gauge railroad at the earliest possible moment, pioneer (pionernyye) trenches are being dug and fill is not being poured to full height, so as to permit the passage of rolling stock.

One difficulty confronting the construction workers is that the relief limits the use of wide-gauge rolling stock; narrow-gauge rolling stock is a more satisfactory and economical type of transport, but there is not enough of it on hand. It is hard to use trucks in the taiga section because ground is extremely wet, which means that the roads have to be covered with some solid material. However, in view of the broken character of the terrain in the taiga area and the high fills and the cuts required, the only efficient way of constructing them at present is with truck transport. Trees in the area makes the solution of the constructing problem easier.

Frequently the "combined" method of organizing the work is employed. In this method the lower part of the embankment is poured on by the dragline excavators out of the reserves and partially out of the cuts, then by the dump trucks up to the amount which will permit the laying of railroad track; the rest of the filling, up to plan specifications, is done by rail transport.

With high fills, when the sides of the ravines drop sharply, trestles are used. This method is good because it makes it possible to employ railroad transport in the more difficult places with more concentrated volumes of work; however, the construction of the trestles and the laying of the work track requires an additional expenditure of labor and materials. In addition, when a trestle is used, the quality of the embankment being made is poorer. In such places it would be better to employ longitudinal-link conveyers (prodol'no-zven'yevyye transportery), which would speed up the work considerably, make it cheaper, and make the construction of various fills and cuts easier. However the construction workers do not have a sufficient quantity of such equipment at their disposal at the present time. The links of the conveyer made by the "Zheldorstroymekhanizatsiya" Trust cannot be used at present because there is no belt. The mechanics themselves started on-the-spot construction of a special metallic net to be employed in place of the belt, but this is still only in the experimental stage.

A machine for frontal pouring of fills was to be employed in building the Stalinsk-Barnaul line, but due to the inefficiency of the Zheldorstroymekhanizatsiya" Trust the manufacture of a new machine, embodying data obtained in tests under production conditions, has been delayed. The old model of the machine did not solve the problem of pouring the fill on in layers, and also did not provide for shrinkage of the soil.

The blasting work in the construction of the trunk line has been eminently successful. On the Stalinsk-Barnaul line this work outstripped the general pace of the work. There are several cuts which have stood unworked for 2 years after blasting, which fact must be attributed to poor planning. However the blasting workers have also performed large amounts of earthwork and masonry.

Grading is simpler on the Akmolinsk-Pavlodar line. Because of the relief dragline, excavators are used to a greater extent. While the percentage of utilization of draglines is 16 percent on the Stalinsk-Barnaul line, it is 58 percent on the Akmolinsk-Pavlodar line. All earthwork is done by the column method.

The most complicated work is that of constructing the left-bank approach to the bridge across the Irtysh River at Pavlodar. The narrowness of the front of the work (1.2 kilometers), the remoteness of the pits, and the complexity of working them requires unusual exertion and integrated effort on the part of all the units. The fill is more than 400,000 cubic meters in volume.

Earth-unloading operations are mechanized, the lifting and shifting of the track is done by the Bizyayev machine, and bulldozers level the earth as it is dumped. The loading, moving, and unloading of earth trains is done by a special schedule.

Building the Yeremen'-Tau mountain pass is second in complexity. About a million cubic meters of earthwork operations have to be performed in order to lay the track on three stretches in the first half of 1949. This project is made difficult by the fact that it is so far from the end point of any railroad and from any repair base, supply base, etc. Thus,

the construction workers are compelled to build the road at a faster than normal pace.

The construction of artificial structures on the South Siberian Trunk Line is proceeding unsatisfactorily. In spite of the fact that there are a large number of culverts of the same kind, assembly-line construction of them has not been organized; as a rule, all elements of a culvert are made at the place where they are being erected.

While few elements of industrialization were introduced into the construction of artificial structures on the Akmolinsk-Pavlodar line, the construction workers on the Stalinsk-Barnaul line were not even occupied with the construction of artificial structures to any extent in 1948. To date, this has been a bottle-neck holding up earthwork operations and track-laying.

In 1948, the main emphasis has been on the problem of constructing artificial structures and integrating their construction with the construction of the roadbed and the laying of track. This has to do particularly with the construction of small structures.

As a rule, artificial structures on a trunk line are constructed by a bridge column made up of units performing different operations. It has been determined that one column does 3,400 cubic meters of work [sic]. The column is equipped with the necessary machinery and transportation. There are between 100-200 persons in a column, including personnel operating the machines and transport equipment.

Bridge trains (mostopoyezda) performing 4.5-60 million rubles' worth of work per year are organized for the construction of medium bridges.

The bridge column or bridge train builds three or four artificial constructions at the same time. The advantages of organizing such columns are obvious; they proved themselves in the construction of the Turksib Railroad and must be more widely used in the construction of the South Siberian Trunk Line.

The adopted plan of work organization in the construction of small artificial structures calls for the use of the continous-speed method and the specialization of working brigades. The technological process of continous production requires such a demarcation of operations and apportionment of them among the performers of the operations that the maximum division of labor and most efficient use of working time is attained.

In accordance with this principle, the construction of artificial structures has been broken down into the following operations, which are entrusted to specialized brigades or units:

1. Preliminary work on the construction platform.

2. Excavation of trenches and their reinforcement.

3. The laying of the foundation up to the base and leveling the surface.

4. Setting up prefabricated structures, reinforced-concrete rings or blocks of abutments and piers, laying rubble concrete when solid abutments and piers are used, the assembly of arches.

5. Putting bands on culverts, plastering drains, putting in headwalls.

6. Caulking and filling with asphalt the joints between the sections of culverts, construction of waterproofing and a clay cover, construction of drains.

7. Work on, and paving of, waterways; the strengthening of the slopes of the fill next to the abutments of bridges.

Such specialization within the columns in constructing artificial structures uses skilled labor to better advantage, makes the workers more skilled, improves the quality of the work, and makes the workers more responsible.

There are a certain number of artificial constructions reserved for each column, and the column works on them one after the other according to a schedule.

Reinforced-concrete rings and abutments of small bridges and substructures, where they are divided into sections, are made centrally in construction yards. However, since the capacity of the construction yards is not great enough to fill all needs, new construction yards are being built on both lines at the base of local materials.

So that the construction of artificial structures may also be industrialized, the engineers and draftsmen are reexamining the individual plans for stone culverts with the idea of using reinforced-concrete culverts instead and are working over the plans for small bridges to see whether the bridges can be made in construction yards and then assembled and installed at the site.

The amount of track-laying in connection with specific assignments in 1948 was set at 162 kilometers for the Akmolinsk-Pavlodar line and at 58 kilometers for the Stalinsk-Barnaul line, while there are to be 155,000 kilometers of ballasting, 55,000 kilometers of which are on the Stalinsk-Barnaul line [sic].

On the Altayskaya and Akmolinsk sides, the track is laid by crane track-layers of the Platov system, for which two unit-assembling bases have been set up. On the Pavlodar side, the tracks are laid by hand; on the Artyshta side, also, because of the small amount, track is laid by hand.

The supply and assembly bases are supplied with the necessary electric tools, transportation, and AG cranes.

The first layer of ballast is being applied. The dumping and spreading of the ballast is all done by machine.

The volume of work on the construction of permanent living quarters is very small in comparison with the volume of other types of work. Housing is primarily of temporary construction and is as a rule located at stops. In planning the organization of this work, particular attention is paid to the use of local materials and development of industry bases. Walls of living quarters on the Altayskaya-Artyshta line are wood for the most part; in the future, with the construction of a brickworks and a cinder-block plant on the route, brick and cinder-block houses will be built. On the western part of the Akmolinsk-Pavlodar line, cinder block is employed, while local stone is employed at Yeremen'-Tau Station. In the eastern section, except for Pavlodar, the basic building material is sandstone, which is found near the route. Sandstone has to be used as a basic building material because of the lack of other materials in that area, and also because the sandstone is found close to the surface here and has a relatively low density (1,700 kilograms per cubic meter). The layer structure

of the deposits makes it possible to obtain bedrock.

Prefab basements, floor panels, roof and partition panels, floor slabs, baseboards, window frames, doorcases, and also individual structures are made in the Pavlodar construction yards and sawmill.

For a while the construction of housing was neglected in building the South Siberian Trunk Line. One of the tasks (particularly for the Barnaul administration) in connection with the expansion of construction on a wide front is the study of examples of the previous use of the assembly-line method in the construction of housing and the application of this technique to the trunk line. Production units and brigades corresponding to the different elements in the construction of buildings must be organized -- the preparatory-work unit, which performs the work of setting up construction platforms and delivering materials; the masonry unit, which consists of a brigade to dig foundation pits and one to lay the foundations and walls; the carpentry unit to build ceilings and roofs, fill in window and door openings, lay floors, etc.; and finishing units, which contain brigades of stove installers, plasterers, painters, glaziers, and workers who assemble buildings and construction platforms. Such columns proved themselves completely where they were organized.

The year 1948 is a turning point in the expansion of work on the construction of the South Siberian Railroad. A large number of construction machines, other machines and devices, and vehicles have been brought together on the project, and a force of mechanics and machine operators has been built up. This means that in 1949 machinery can be better utilized, mechanization will be extended to more types of work, and a greater absolute volume of work will be mechanized in all types of construction and installation work.

The supply of industrially produced constructions has increased. In Pavlodar, construction yards for wood manufacture and reinforced-concrete products, as well as metal constructions shops, brickyards, and a wood-products factory, have been built or remodeled; and stone and gravel pits have been opened up. The power base of the projects has been strengthened; the South Siberian Trunk Line has received at least ten mobile steam engines, which is an important factor for new construction.

While the past year has not shown any great results in the industrialization of construction, the base which has been created will secure the industrialization of construction on a broad scale and the introduction of prefabrication in 1949, and will make it possible to organize the work along assembly-line principles, especially in the construction of civil and artificial structures. The builders and the planners must again review all the plans with a view toward having parts and structures made centrally and then assembled at the site.

In 1948 the construction of the trunk line has been conducted according to a single plan of organization in which the mistakes of the preceding years have been corrected, the necessary advance of preliminary work has been provided for, and a more efficient use of machinery and materials has been set up.

The labor force working on the South Siberian Railroad has expanded and grown stronger. In the struggle to fulfill the State plan and to fulfill and overfulfill production assignments, hundreds of Stakhanovites have appeared, who, by their selfless labor have set an example in high labor productivity.

Now the builders' task is to consolidate their achievements and to

get wintertime preparations going at full speed immediately. The work tempos which have been achieved must not be let up during the winter. Whether they will or not depends on the extent to which the administration, sections, industrial enterprises, etc., are prepared to meet the winter.

To assure continuous train traffic on the sections of track which have been laid, it will be necessary to push the preparation of shelters and snow equipment and the heating of watering stations and of supply stations. Because of unsatisfactory preparation for the 1947-48 winter, train traffic on the Altayskaya-Zarinskaya section was interrupted for more than 2 weeks. It was necessary to take the emergency measure of using a large number of construction workers for snow clearing.

The most labor-consuming work in winter is earthwork; however, the concentration of this work in the middle sections of the route makes it possible to perform successfully the work in winter with machinery. The winter schedule for the repair of excavation equipment must assure that work with excavators proceeds without interruption.

There must be particulary great activity in the winter in the construction of civil and industrial structures. Construction industry bases should be finished during the winter so as to be completely ready for work in 1949, and whatever procurment of materials is necessary, particularly of wood, should be done then.

It is particularly necessary to think of work which can be performed more successfully in winter; for example, driving piles from ice-covered rivers, digging trenches and pits in frozen ground, delivering materials to out-of-the-way places by sleigh, etc. The year 1949 will be a year of still more extensive work on the South Siberian Railroad; therefore, preparation for it is the builders first duty. The South Siberian Railroad must become one of the foremost constructions of the postwar Stalin Five-Year Plan. There is every possibility that it will.

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